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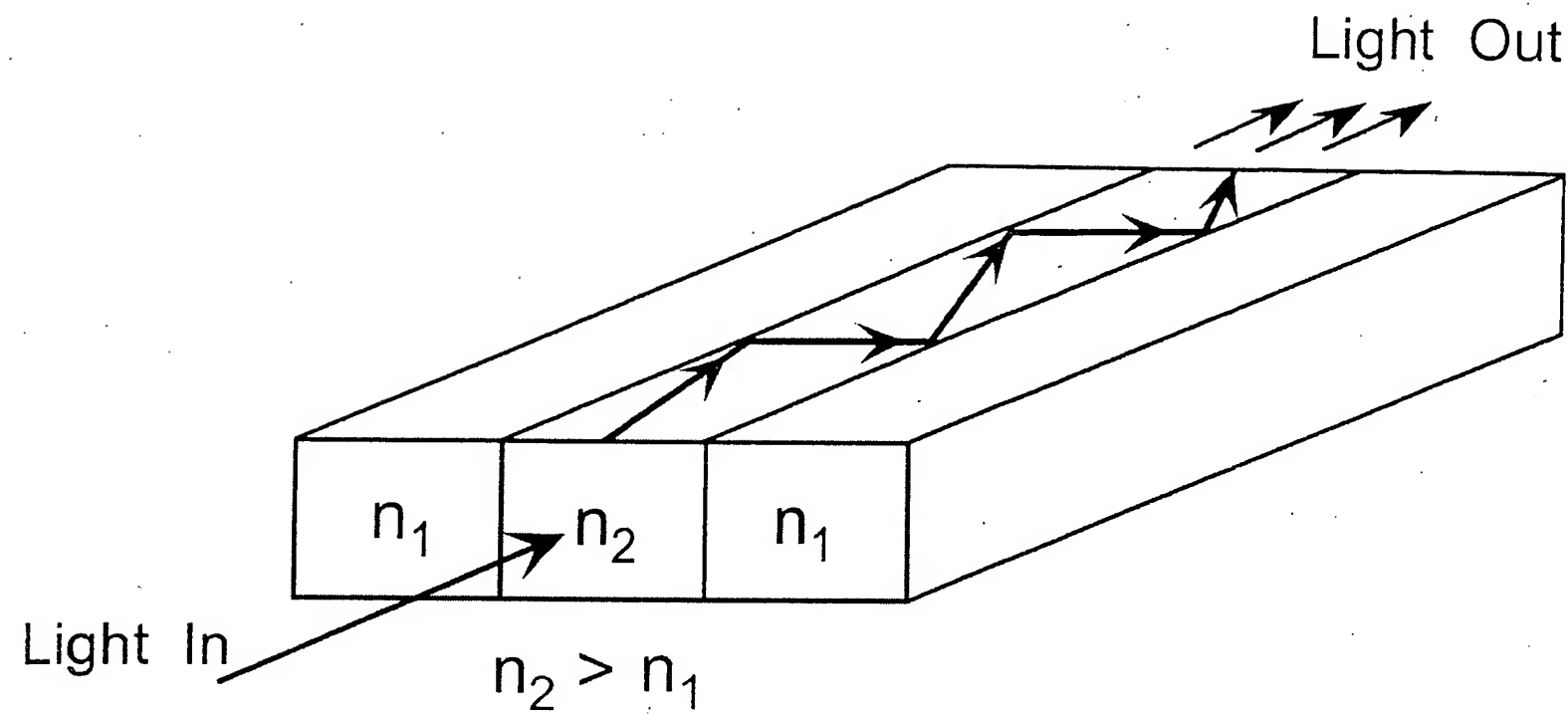


Fig. 1 A conventional dielectric waveguide.
The optical mode can be visualized as a plane wave
zigzagging down the high index (n_2) channel.

(print
art)

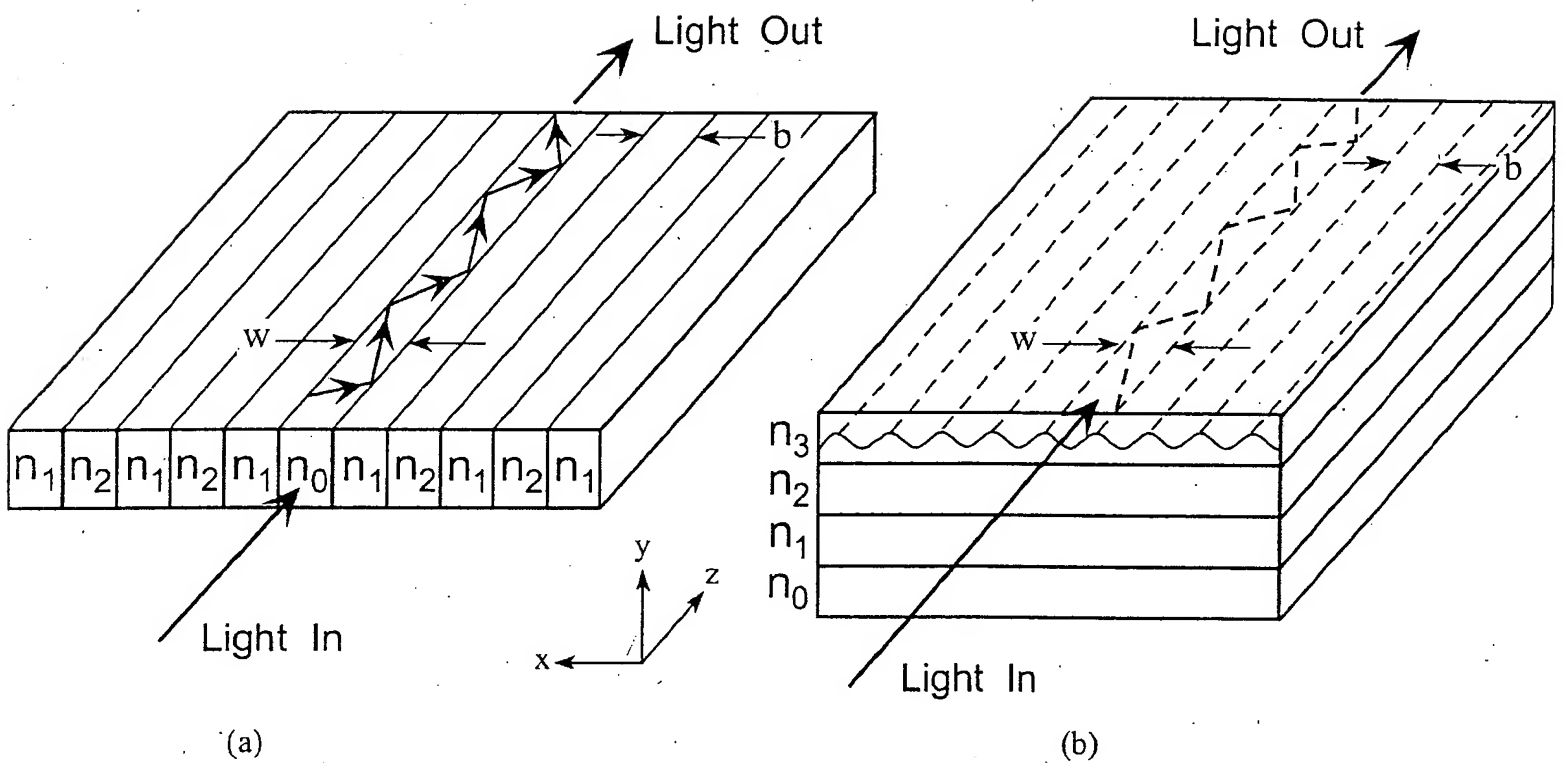


Fig. 2 (a) A planer realization of a transverse Bragg Waveguide layers
 (b) The planer alternating periodicity is due to a corrugated wavy interface of an epitaxially grown multilayer

(prior art)

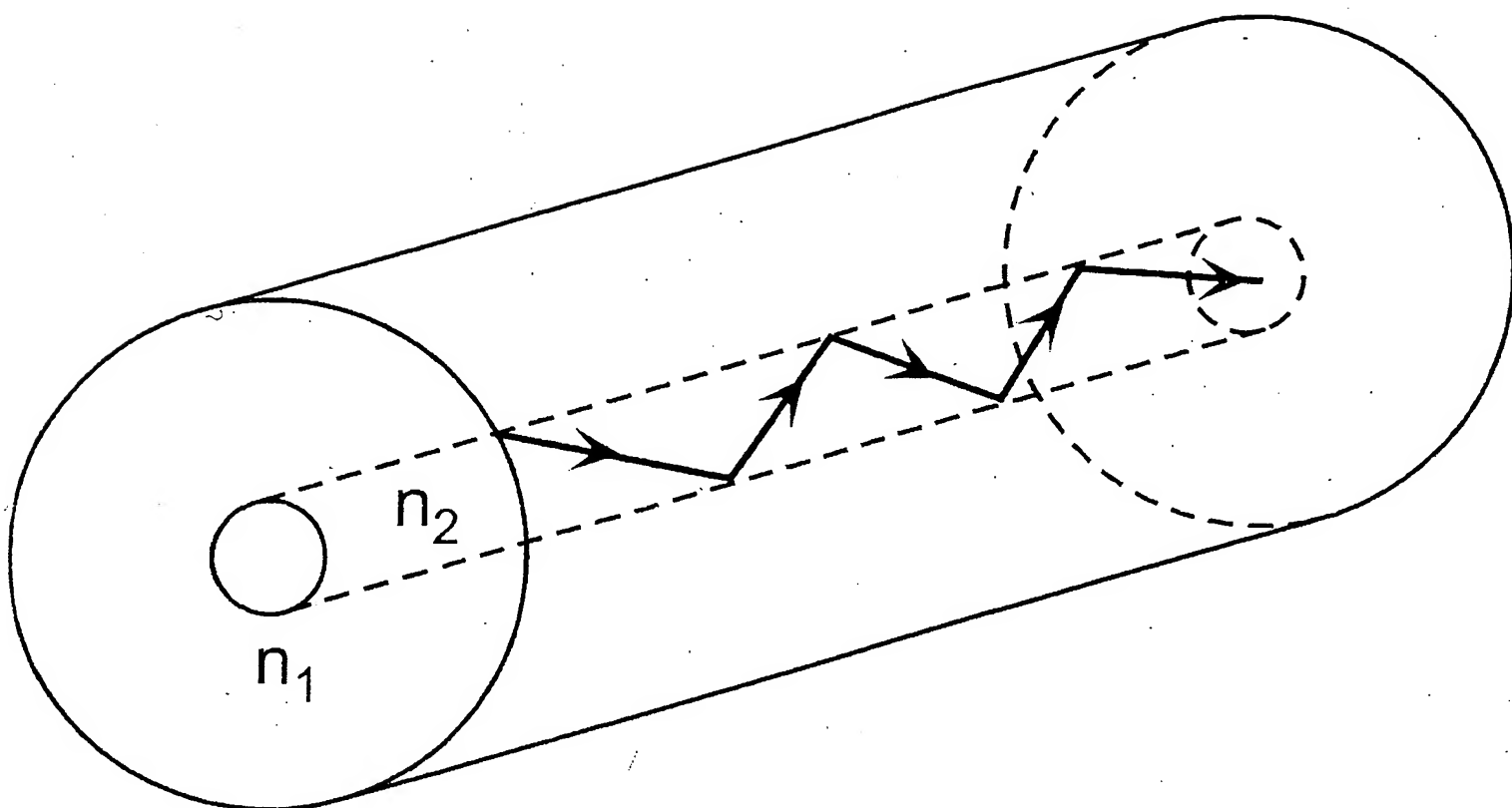


Fig. 3 A conventional dielectric fiber ($n_2 > n_1$) such as used in optical fiber communication.

(prior art)

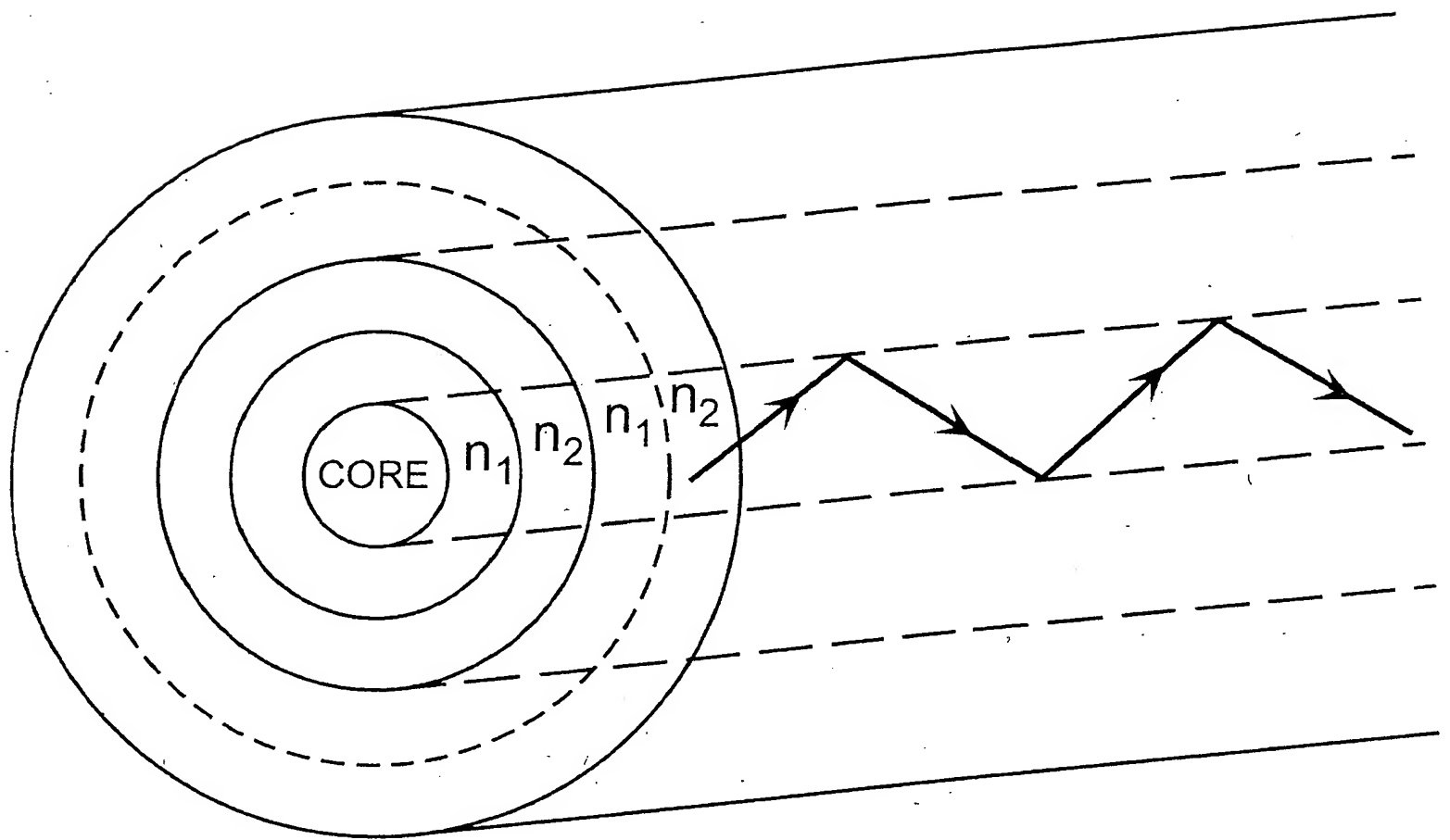


Fig. 4a. A cylindrical Bragg fiber. Light is guided in the Core and is Bragg reflected at the interface.

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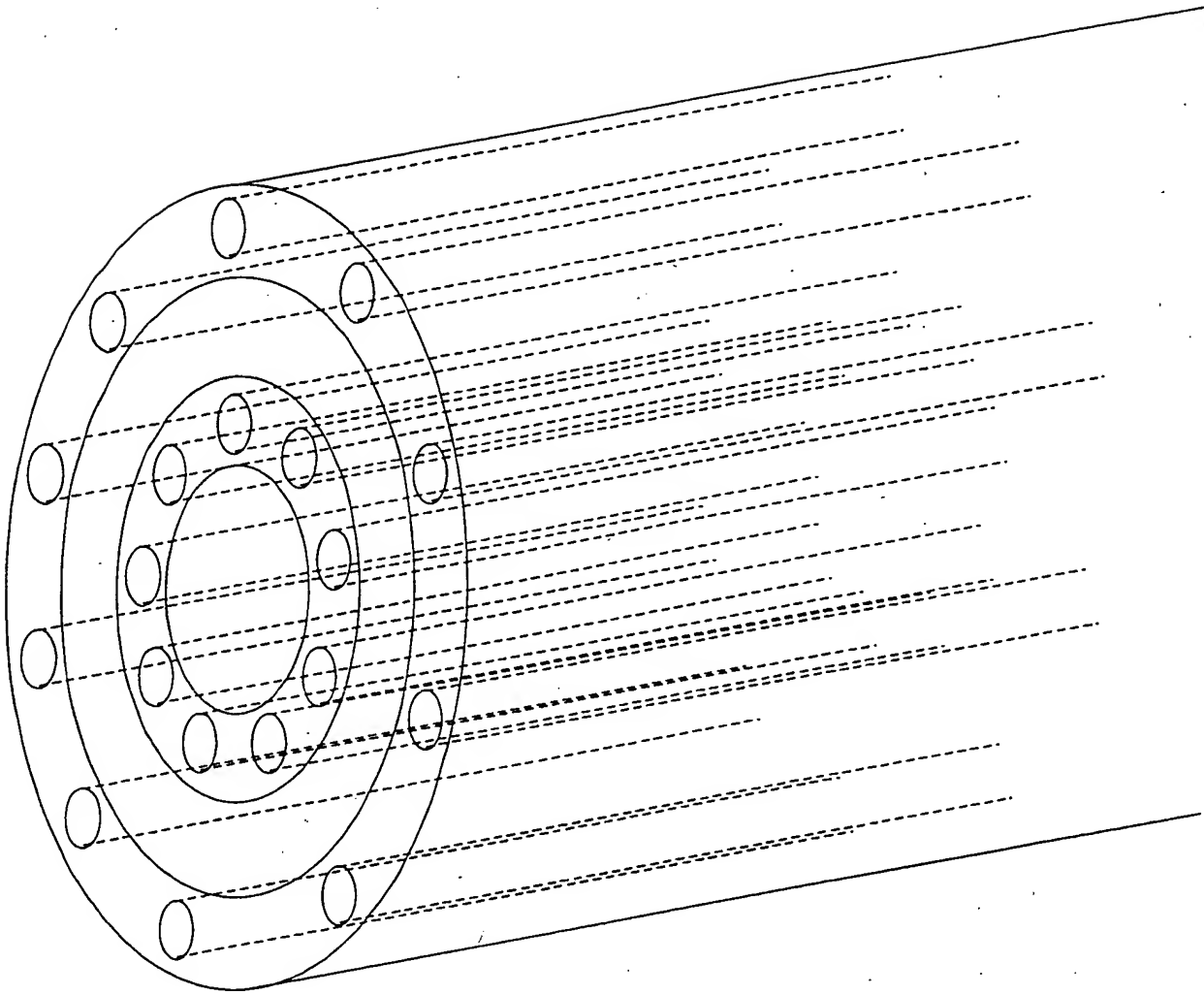


Fig. 4b The index contrast between two adjacent layers is achieved by using long hall empty or filled.

(prior art)

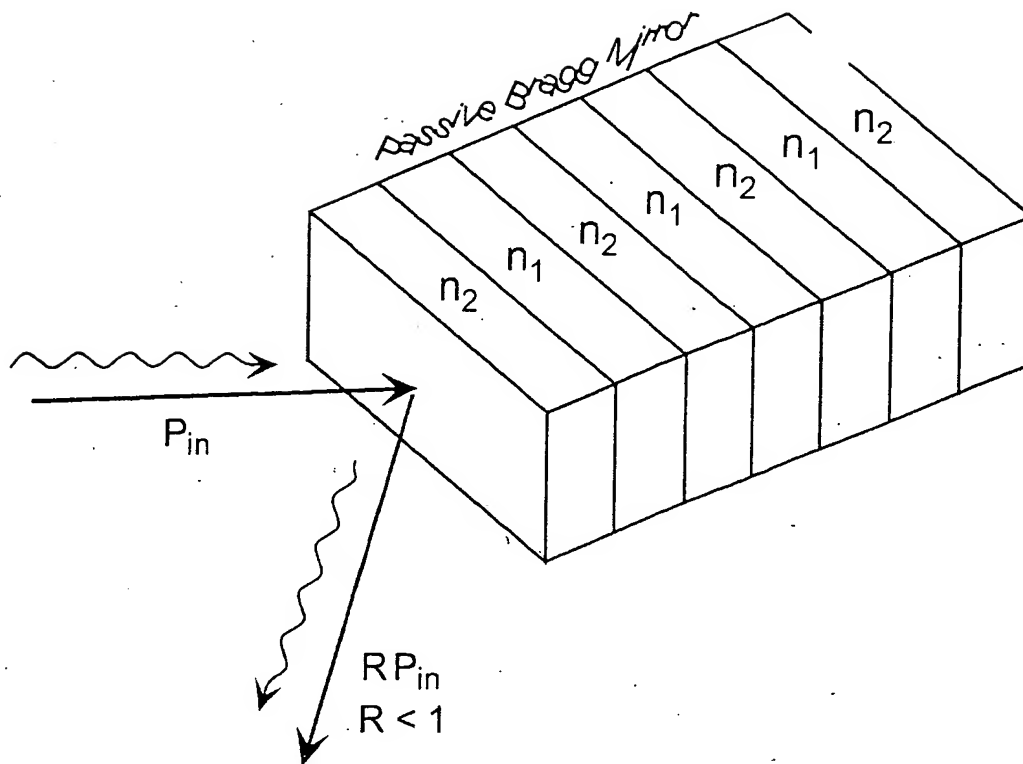
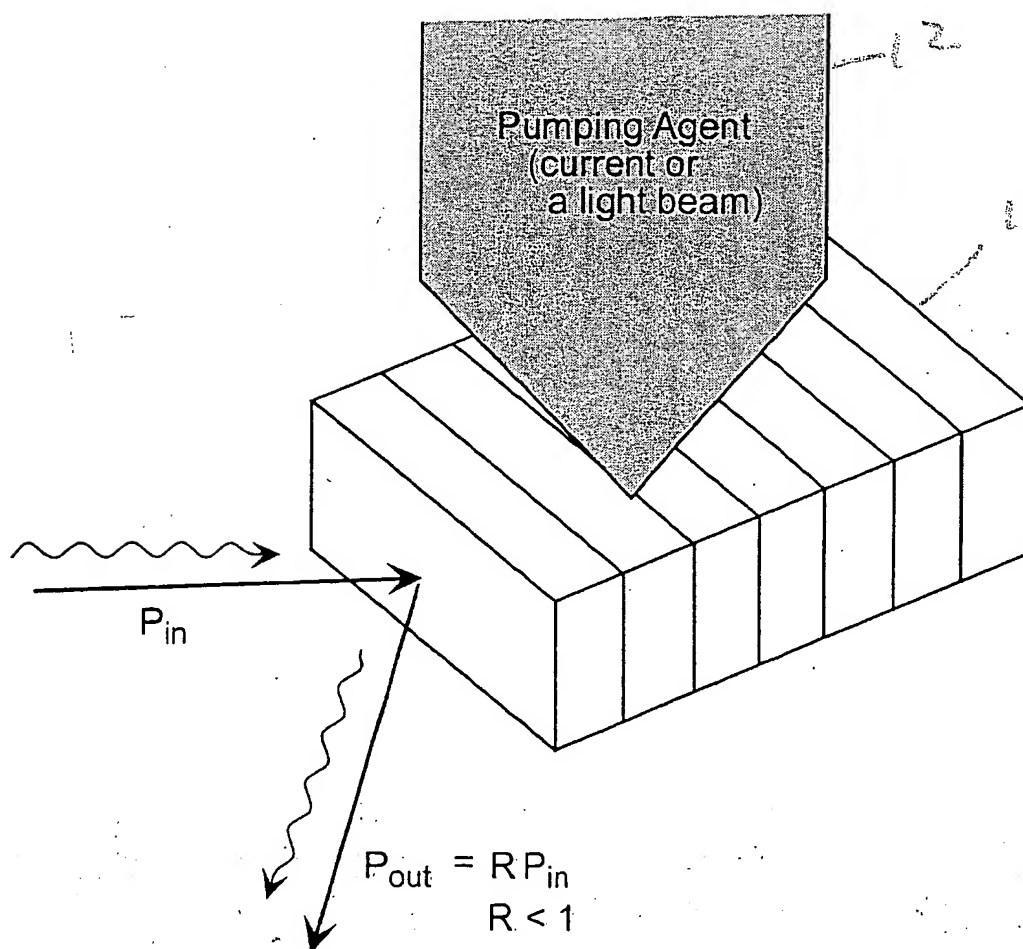


Fig. 5 (a) A passive Bragg reflector

(prior art)



(prior art) Fig. 5 (b) An amplifying Bragg reflector

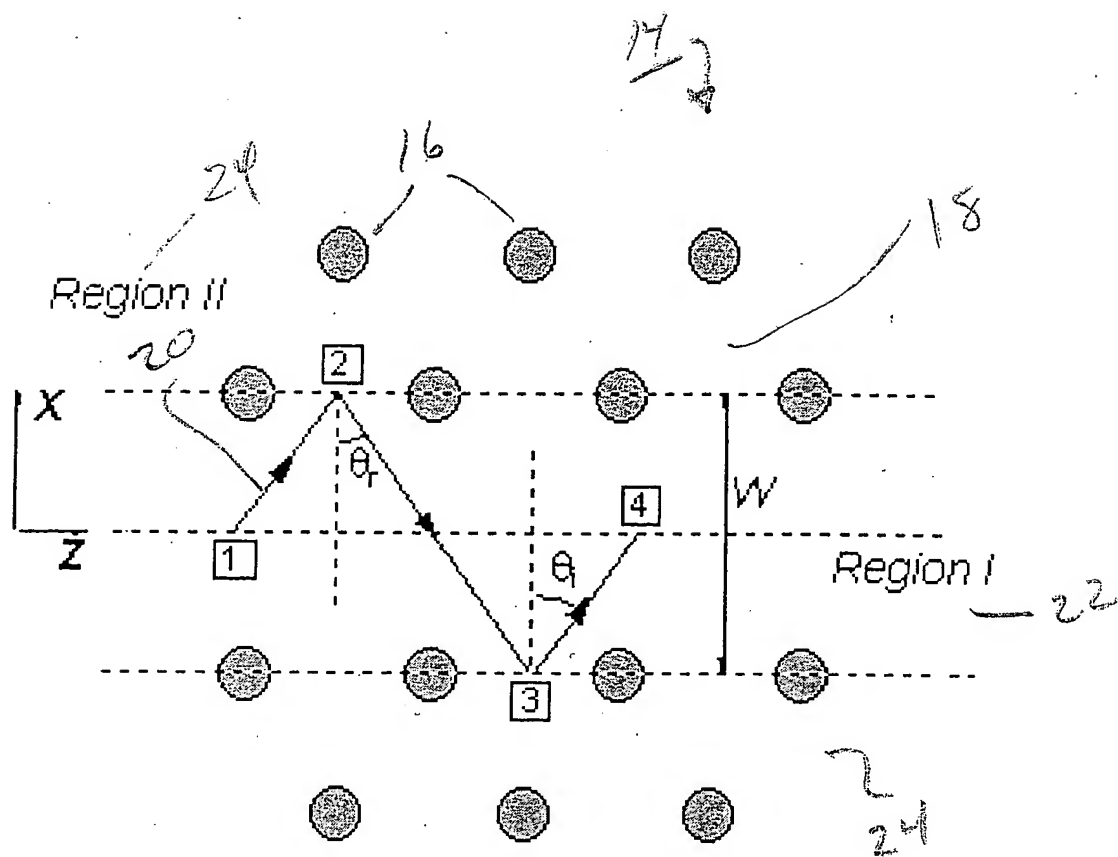


Fig. 6 Top view of a 2D periodic waveguiding structure: a guiding channel of width W (core) between two semi-infinite arrays of air holes in a periodic pattern, e.g., a triangular lattice (cladding). Also shown, in the core, are the two in-plane k -vectors of the plane waves that comprise the waveguide mode.

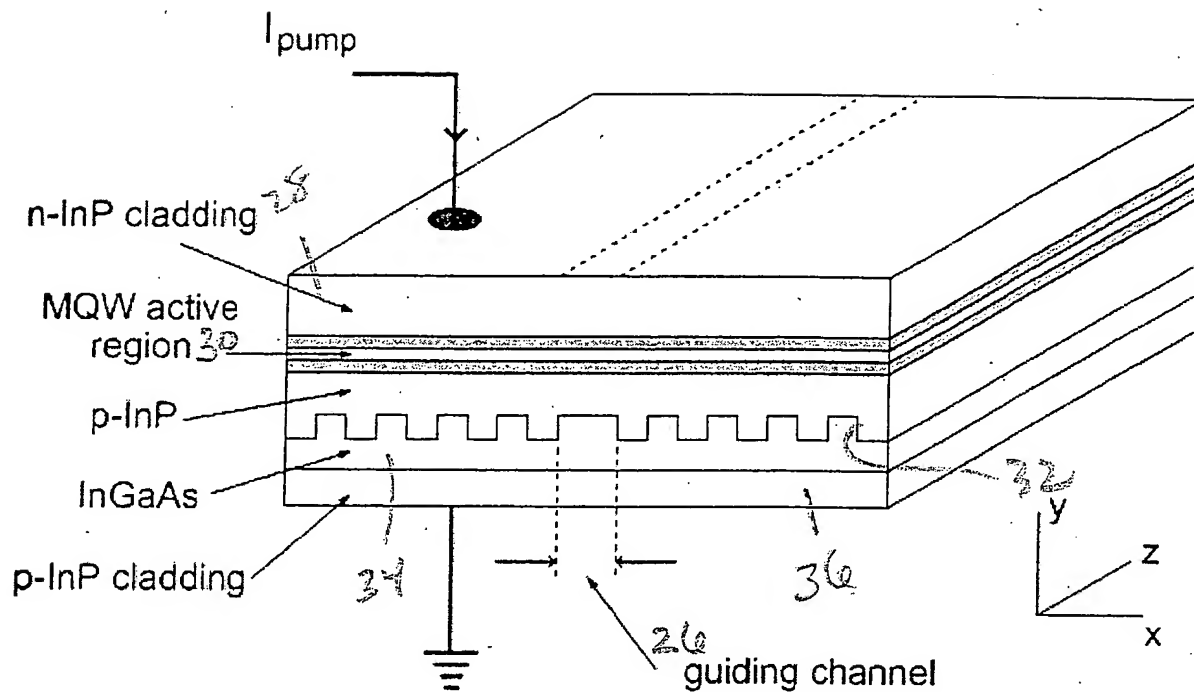


Fig. 7 Schematic of proposed TBR laser amplifier structure in InP-based material. The parallel trenches flanking the guiding channel define a periodic index variation in the transverse (x) direction, and contribute to the modal confinement. [MQW: multiple quantum-well region.]

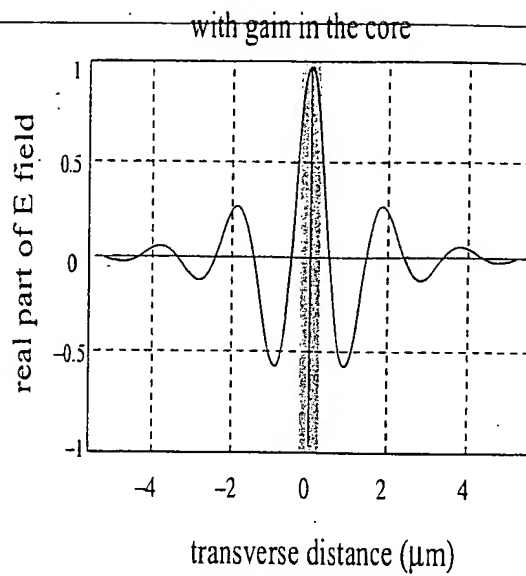
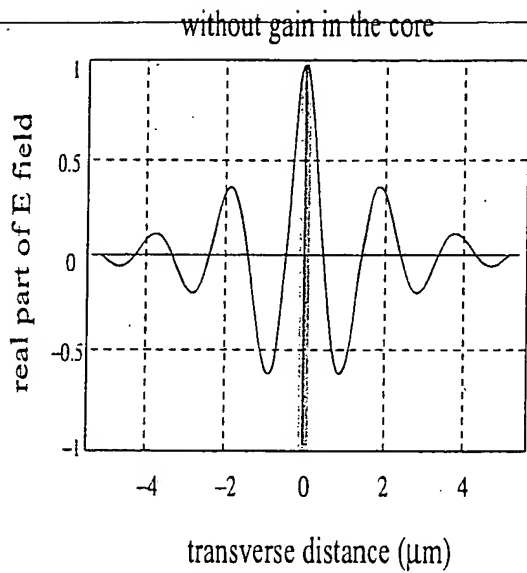


Fig. 8a

Fig. 8b

Figure 2, A. Yariv, Y. Xu and S. Mookherjea